IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Attorney Docket No. 13784US02)

In the Application of:

Uri Elzur

Serial No. 10/651,459

Filed: August 29, 2003

For: SYSTEM AND METHOD FOR HANDLING OUT-OF-ORDER FRAMES

Examiner: Brian D. Nguyen

Group Art Unit: 2661

Confirmation No. 8761

CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being sent via facsimile to the United States Patent and Trademark Office on April 24, 2006.

By _____
Ognyan Beremski, Esq.
Registration No. 51,458

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Applicant requests review of the final rejection in the above-identified application, stated in the final Office Action mailed on November 22, 2005 (hereinafter, the Final Office Action) with a period of reply through April 24, 2006, pursuant to the attached Petition for Two Month Extension of Time. The Applicant also requests review of the arguments stated on page 2 of the Advisory Office Action mailed on March 20, 2006 (hereinafter, the Advisory Office Action). No amendments are being filed with this request.

This request is being filed with a Notice of Appeal. The review is being requested for the reasons stated on the attached sheets.

REMARKS

The present application includes pending claims 1-29, of which, claims 1-12, and 14-29 have been rejected. Claim 13 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. The Applicant respectfully submits that the claims define patentable subject matter.

I Mallory Does Not Anticipate Claims 1, 4-12, and 14-22

Mallory "relates to communications systems in general and, more specifically, to methods and apparatus for reducing data loss on a network with an unreliable physical layer." *See* Mallory at ¶ [0001].

Claim 1 recites, in part, "placing data of the out-of-order frame in a **host memory**," while claim 17 recites, in part, "processing at least one of the control information, the data information and context information to determine a buffer location in **a host memory**...." The Final Office Action states the following: "Mallory clearly teaches in paragraph 0011 that the receiver buffers the out-of-order frame in a receiver buffer and in paragraph 0060 Mallory teaches that if they are out-of-order ... buffer frames following a gap for a time **in a reorder buffer**." *See* the Final Office Action at page 8 (emphasis in original). In addition, the Advisory Office Action states: "The host memory as claimed is merely used to store the out-of-order frames and the receive buffer disclosed by Mallory is also used to store the out-of-order frames. Therefore, the receive buffer is equivalent to the host memory." *See* the Advisory Office Action at page 2.

Notably, the Final Office Action only asserts that Mallory teaches placing the frame in a "reorder buffer," but not a **host memory**, as recited in the claims 1 and 17. In particular, the Final Office Action and the Advisory Office Action rely on ¶ [0011] of Mallory, which states the following:

> In some specific embodiments, the sender transmits the transmitted frame to more than one receiver, such as in a multicast or broadcast mode. The frame identifiers can be a set of sequential integers with frames transmitted in sequential frame order. In some embodiments, when a receiver receives a frame out of order, the receiver buffers the out of order frame in a receiver buffer for a receive buffer period until preceding frame are received or the receive buffer period expires.

See Mallory at ¶ [0011]. Mallory only states that the frame out of order may be buffered in a **receiver buffer**. Mallory, however, does not teach, nor suggest, that the receiver buffer is, or within, a **host memory**. The Applicant further disagrees with the Examiner's assessment in the Advisory Office Action that "the receive buffer is equivalent to the host memory." The Applicant submits that **the terms "receive buffer" and "host memory" have a specific meaning and use in the relevant arts and are clearly not equivalent.**

Further, the Final Office Action and the Advisory Office Action rely on paragraph [0060] of Mallory. Paragraph [0060] of Mallory recites the following:

> If the next higher layer does not require frames to be delivered in order, the LARQ handler will pass up frames as they are received, rather than storing the out of order frames. However, where the next higher layer requires frames in order, or assumes the loss of frames if they are out of order, the LARQ handler should be configured to buffer frames following a gap for a time in a reorder buffer so that if the receiver can fill the gap with retransmitted frames in time, the frames can be passed to the next layer in sequence order.

Similar to ¶ [0011] of Mallory, this paragraph merely **discloses that out-of-order frames may be stored in a buffer, but does not teach or suggest "placing data of the out-of-order frame in a host memory,"** that the buffer is in a host memory, or "managing information relating to one or more holes in a receive window," as claimed by the Applicant.

The Final Office Action also states the following:

> Also in paragraph 0060, Mallory teaches "**managing** information relating to one or more holes (gap) in a receive window by buffering frames following a gap (hole) for a time in a reorder buffer so that if the receiver can fill the gap with retransmitted frames in time, the frames can be passed to the next layer in sequence order. In paragraph 0141, Mallory further teaches of managing including updating the sequence number.

See the Final Office Action at pages 8-9 (emphais in original). The Advisory Office Action also seeks support in similar language from paragraph [0060] of Mallory. *See* the Advisory Office Action at page 2. With respect to ¶ [0060] of Mallory, shown above, there is simply nothing in that passage that relates to a "receive window," and certainly not "managing information relating to one or more holes in a receive window." That passage merely discloses a LARQ handler, but **does not teach or suggest a "receive window," or "managing informaiton relating to one or more holes in a receive window."** If the rejection is maintained, the Applicant respectfully requests an **exact quotation and pinpoint citation** to where such limitations are disclosed in ¶ [0060].

Additionally, the Advisory Office Action and the Final Office Action continue to rely on ¶ [0140] of Mallory. Mallory, at ¶ [0140] states the following:

> If a received frame's sequence number (not a Nack control frame) is new and within a window of MaxRxSaveCountChannel from Receive Sequence Number, the receiver will update its state by advancing the window of recent sequence numbers until the received frame's sequence number is current. If the received frame's new sequence number was outside of the valid sequence numbers, the sequence number should have been treated as out-of-sequence, and the channel reset function performed so that the new frame will be in-sequence.

This portion of Mallory merely states that a frame's sequence number may be within a window of MaxRxSaveCountChannel. While the "receiver will update its state by advancing the window of recent sequence numbers until the received frame's sequence

number is current," this portion of Mallory **does not teach, nor suggest, "placing data of the out-of-rder frame in a host memory," or "managing information relating to one or more holes in a receive window,"** as recited in claim 1, nor "determin[ing] a buffer location in a **host memory** in which to place the data information," or "managing receive window hole information," as recited in claim 17. Instead, this portion of Mallory merely discloses that windows are advanced based on their sequence numbers.

The Advisory Office Action and the Final Office Action also continue to rely on ¶ [0141] of Mallory to reject claims 1 and 17. *See* the Final Office Action at pages 3-5 and the Advisory Office Action at page 2. This paragraph of Mallory, however, states the following:

> The Receive Sequence Number is repeatedly incremented by 1 (modulo 256, or other size of the sequence space) until it is equal to the received frame's sequence number. Each time it is updated, the state of the new current sequence number is initialized as missing and the time when it was first missed is recorded, unless the current number is that of the receive frame and the receive frame was a valid data frame (not a reminder and not errored). **If the frame is marked received, it is also saved,** possibly temporarily. For each new sequence number, **the trailing edge of the sliding window of recent sequence numbers also changes.** The new oldest recent sequence number is checked to see there is a held frame. If there is a saved frame (Rx Frame Flag=1), that frame is sent up to next higher layer and Rx Frame Flag is set to 0. When the current sequence number has been fully updated to the received sequence number, the receiver then scans the history of recent frames, starting with the oldest sequence number not yet lost or sent up. If that sequence number has a held frame, then that frame and any in-sequence held frames that follow it are sent up to the next higher layer. This will result in the just-received frame to be sent up to the next higher layer, if appropriate.

Mallory at ¶ [0141]. This portion of Mallory merely discloses that sequence numbers are repeatedly incremented, and that received frames are saved. While "trailing edges of sliding windows of recent sequence numbers also change," **there is nothing in this portion of Mallory that teaches or suggests "placing data of the out-of-order frame in a host memory," "managing information relating to one or more holes in a receive window,"** as recited in claim 1, nor "managing receive window hole information," as recited in claim 17. The Applicant respectfully submits that a change in the sequence number of a sliding window is by no means "managing information relating to one or more holes in a receive window," or "managing receive window hole information."

In addition, the Advisory Office Action states: "'Managing' as claimed in claim 1 could be storing, updating, incrementing, etc." The Applicant respectfully disagrees with such interpretation as the language from paragraphs [0060], [0140], and [0141] of Mallory does not disclose or suggest "managing information **relating to one or more**

holes resulting from the out-of-order frame in a receive window," as claimed by the Applicant.

In short, while these portions of Mallory disclose that certain frames may be saved, they **do not teach, nor suggest, "placing data of the out-of-order frame in a host memory," "managing information relating to one or more holes in a receive window," as recited in claim 1, nor "managing receive window hole information," as recited in claim 17.** Thus, at least for this reason, the Applicant respectfully submits that Mallory does not anticipate claims 1, 4-12, and 14-22, and that the Office Action has not established a *prima facie* case of obviousness with respect to these claims.

II. The Proposed Combination of Mallory In View Of Hayes and APA Does Not Render Claims 23-29 Unpatentable

The Applicant now turns to the rejection of claims 23-29 as being unpatentable over Mallory in view of Hayes and APA. Claim 23 recites, in part, "wherein the network subsystem places data of the out-of-order frame in a **host memory**," and "wherein the network subsystem manages information relating to one or more holes in a receive window." The proposed combination does not teach or suggest these limitations. Thus, at least for these reasons, the Applicant respectfully submits that claims 23-29 should be in condition for allowance.

Based on at least the foregoing, the Applicants believe the rejection of independent claims 1, 17, and 23 has been overcome and request that the rejection be withdrawn. Additionally, claims 2-16, 18-22, and 24-29 depend from independent claims 1, 17, and 23 and are, consequently, also respectfully submitted to be allowable. The Applicant also reserves the right to argue additional reasons beyond those set forth above to support the allowability of claims 1-29.

III. Conclusion

The Applicant respectfully submits that claims 1-29 of the present application should be in condition for allowance at least for the reasons discussed above and request that the outstanding rejections be reconsidered and withdrawn. The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,

Date: April 24, 2006 By: _____

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